UV Beads Lesson

Grade 3

Materials: uv beads, black light, screen/computer/speakers, suntan lotion, rawhide

Day 1

1. Watch Brainpop.com : sun protection

a. the username: dadesunset

b. password: miamidade

1. Take the brainpop quiz and look at some of the FYI’s on brianpop
2. Ask kiddos if they use sun tan lotion
3. Show students the UV Checker digital device. Explain what it is and what it can show. (UV presence and the amount given off.
4. Ask if they can get a sunburn in the shade……next to a window at home…window in the car??
5. Read …..

Your skin is also an excellent detector of ultraviolet (UV) radiation. When you expose bare skin to sunlight, your skin will either turn brown (a suntan) or red (a sunburn). These responses by your skin are a signal that the cells under your skin are being assaulted by UV radiation. UV radiation wavelengths are short enough to break chemical bonds in your skin tissue and over prolonged exposure, your skin may wrinkle or skin cancer may appear.

There is a safer way to detect UV--by using UV beads. These plastic beads contain a chemical which changes color when exposed to UV radiation. The colors that develop depend on the wavelength of the UV radiation.

1. Pass out one single bead. Ask them what the bead is for. Notice it is white. In the presence of UV, it turns a specific color. Place a selection of UV beads near a fluorescent light. Do any of the beads change color? Can you get a sunburn or a tan by sitting next to a fluorescent light? (no). A projector/overhead? (no). What about the windows? (yes/maybe not if the windows are treated with UV protecting film)
2. Place suntan lotion on the bead and let it dry.
3. Pass out raw hide to each student.
4. Pass out 10 more beads per student (ten for the bracelet and 1 for the lotion total at this point). Make the bracelet as shown in the picture.
5. Take the UV beads outside, but not into direct sunlight. Do any beads change color? Is there UV radiation in the shade?
6. Now place the beads in direct sunlight. What do you notice about the intensity of the beads' color?

\*Should not make the one with the lotion change though.

1. Ask them to bring the bracelet back next week for a follow-up lesson. Meanwhile, ask them to experiment next to a window in their home and inside their car to see if it is protecting them.

Day 2

1. Ask if any of the students are still wearing their indicator.
2. Ask students if they tried to use the indicator inside their car windows and home windows.
3. Go to this website and look to see what the index is for this day in Lewisville

<http://www.epa.gov/sunwise/uvindex.html>

1. Have students answer these questions on a sheet of paper and then share with the group:

* Can you explain how it is possible to get a sunburn on a cloudy day?
* Can you design a test to measure UV on a cloudy day?

1. Have students put on the UV nail polish onto 2-3 fingers and go outside again. Discuss
2. Go to this website for more activities

<http://www.epa.gov/sunwise/kids/kids_actionsteps.html>